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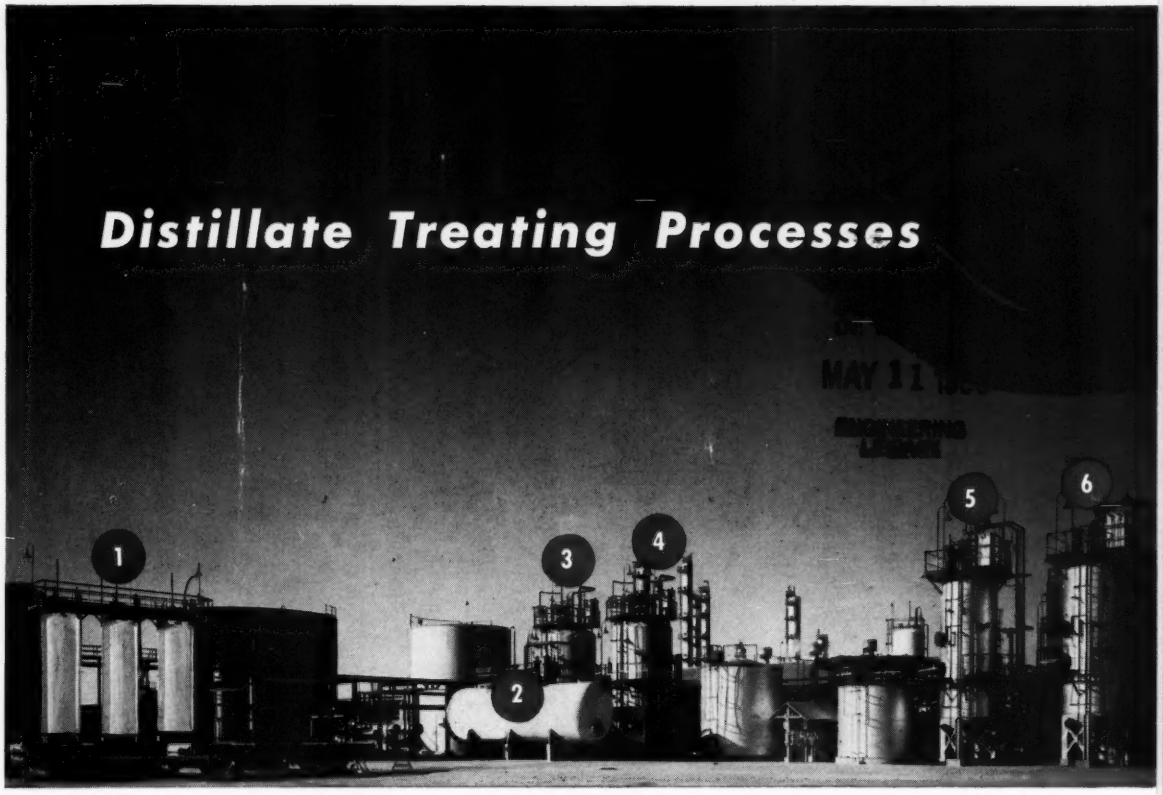

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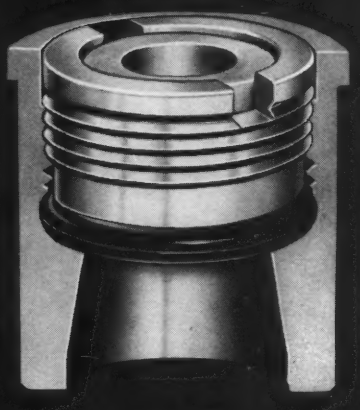

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Accident Control— Our Accountability As Line Managers

An Address by GEORGE F. GETTY II, President of Tidewater Oil Company At The Western Oil & Gas Association's Seventh Southern California Oil Industry Safety Conference — April 20-21, 1959

I appreciate this opportunity to participate personally in this unique conference program. The entire concept of these conferences—that is, for managers to meet together to improve their own performance—is truly remarkable. These conferences demonstrate the progressiveness of our industry, the recognition of a challenge we must meet, and a sincere desire to become better managers through education.

As members of a civilized society, we inherently attempt to prevent and to overcome human suffering. As members of a business organization, we recognize that the difference between success and failure depends largely on the people in our organization. As you well know, the oil industry is a pioneering, constantly changing industry. New frontiers in technology, methods and geography are a continuing challenge. The diversity and complexity of our activities are ever increasing.

These things make us proud to be oil men, at the same time they make our industry hazardous. We risk capital every time we take a lease, spud a well, build a service station. These are necessary risks to business survival.

But we also face a human risk. In our business we assume the risk of accidents and personal injuries. Just as we have a real responsibility to our stockholders to minimize our capital risks by vision and judgment, we certainly have an obligation to ourselves and our fellow man to reduce accident risks to an absolute minimum.

George F. Getty II

I will not infringe on your time by dwelling on the value of safety. The fact that you are participating in this conference is evidence that you and your company recognize the importance of accident prevention and the many reasons why we cannot tolerate waste of human and material resources. I shall confine my comments to my opinion as to how safety in operations can best be achieved.

This may more appropriately be accomplished by sharing with you some of the experiences of my own company. We think that we have recognized the logical approach to industrial accident control.

As recently as 1953, our company was experiencing a disabling injury frequency rate of almost three times that of the industry, as reported by the American Petroleum Institute. Needless to say, this was of real concern to us. There was no question that something should be done. The only question was what to do.

In an effort to answer this question, we first took inventory of our then current safety activities. The results of this inventory were somewhat of a puzzle. We found that we were having employee safety meetings, providing adequate and proper personal protective equipment, training in first aid, displaying safety posters, distributing safety literature, inspecting equipment, providing various forms of recognition for safe job performance; and, yes, we had safety engineers on the payroll.

We in top management evaluated the demands being made upon supervising personnel concerning accident control. We realized that our managers were aware of their accountability regarding the routine productive aspects of their jobs. The results indicated this. However, our studies and our accident experience indicated that they did not recognize their responsibility for accident control. We did not then and still do not feel, or want our managers to feel, that safety is the company's primary objective. It is not. If safety were the sole objective of the company, we could shut down all operations and immediately be perfectly safe, and as promptly be out of business.

We believe that every manager should adopt the attitude that the ob-

jective of the company, and of his particular unit, is optimum job performance. And, optimum job performance can be achieved only with effective accident control. Only under such conditions can there be ideal use of human and material resources.

When we decided that we could not prevent accidents just by posters and literature and meetings and inspections, we chose an entirely new course. We placed the responsibility for safety where it belongs—with the line manager. We made it clear that the full and definite responsibility for the safety of personnel and equipment in any unit is vested directly in the manager or supervisor of that unit.

We do not believe that our safety personnel can guarantee safety and prevent accidents. We expect them only to advise and guide line managers in the matters of the best procedures and equipment designed to create a climate in which accident control can be effective. Those safety activities which do not reduce hazards are being eliminated.

This change in concept, obviously was not made effective overnight. We had to educate our line managers to the viewpoint that it was as much their responsibility to build safety into a job as it was to see that the job was done.

We have had some interesting experiences in this change-over. One of our division production managers includes accident control as one of the factors in the appraisal of supervisory performance. Each supervisor in his department receives a periodic appraisal which weighs heavily in the determination of merit increases and promotions. You will have no difficulty in imagining how importantly these supervisors regard safety, knowing that their record of accident control has an important bearing on their progress with the company.

One of our vice presidents, who is also a division general manager, requires every supervisor in his division to establish standards of performance necessary to achieve safety in his operation. Any willful violation of these standards or laxity in enforcement requires prompt disciplinary action.

We have established as a policy that in the case of every industrial injury or motor vehicle accident, the immediate supervisor must conduct an investigation, determine causes, and report to his department head the action he is taking to prevent recurrence.

These examples show that, with us, safety is no longer something apart from operations—a job for staff specialists—something to be hope for. Accident control has now been firmly established as an integral part of line positions, with each manager fully aware of his direct responsibility in that respect.

We do not have a special staff to tell employees that they should gauge tanks accurately, or survey straight lines, or get to work on time. They learn these things from their supervisors. Likewise, we feel that we should not have a special staff to tell employees that they must operate safely in order to do the most efficient job. That knowledge, too, comes from the supervisor who is responsible for getting the job done in the most efficient —and accident free—manner.

We feel that the best time and place to tell a man that it is unsafe to stand in front of a car to guide it onto a lube bay hoist is as a part of his on-the-job instructions by his supervisor. This is much sounder and more effective than handling him literature on the subject.

By now, I am sure, you have the impression that I believe the success of the safety program depends solely upon the managers or supervisors. You are exactly right.

We do not ask the paymaster to pass on merit increases, the purchasing agent to determine the size of pumps to be ordered, or the training coordinator to teach roustabouts to lay flow lines. Why, then should we expect a safety engineer to direct activities of our employees?

I think it is a mistake for our safety advisors to be expected to stimulate our employees' interest in safety, to conduct group safety meetings for employees, to be allowed to shut down jobs, or to be held responsible for equivalent inspection or accident investigation. My suggestion is that we should all utilize our safety specialists as true staff members—for advice and for guidance—but not for operating responsibilities.

I think that our concept of fixing safety accountability with line managers was the greatest single factor which made possible the National Safety Council Award of Honor presented to our Company in 1957 for outstanding improvement in our accident experience and, in the same manner, enabled Tidewater to establish for itself in 1958 a new record of safe job performance.

It appears that our accident frequency rate is, for the first time, well below the average for the industry. I do not tell you this boastfully, but simply to convey to you how valid I feel our approach to accident control is. And we still feel we are a long way from achieving optimum safe work performance.

In conclusion I would like to say that I am fully convinced that only through the efforts of line managers can accidents be effectively controlled.

The demands on our industry today are tremendous and ever-increasing. The challenge can be met by continuing progress, not only in technology, but in expanding the managerial skills which develop the best use of our human resources. One of the first requirements is safety—and the accountability for that lies with you—the line managers.

GP to Drill in Alaska

General Petroleum Corporation is making preparations for moving in equipment to commence the drilling of an exploratory well on lands near Bristol Bay, Alaska, which are included within a 455,000-acre Development Contract approved on March 18 by the Secretary of the Interior.

Rig and camp facilities that were used to drill Humble Oil Company's Bear Creek No. 1 will be moved to the Bristol Bay area for General Petroleum's exploratory well. Rowan Drilling Company has the contract.

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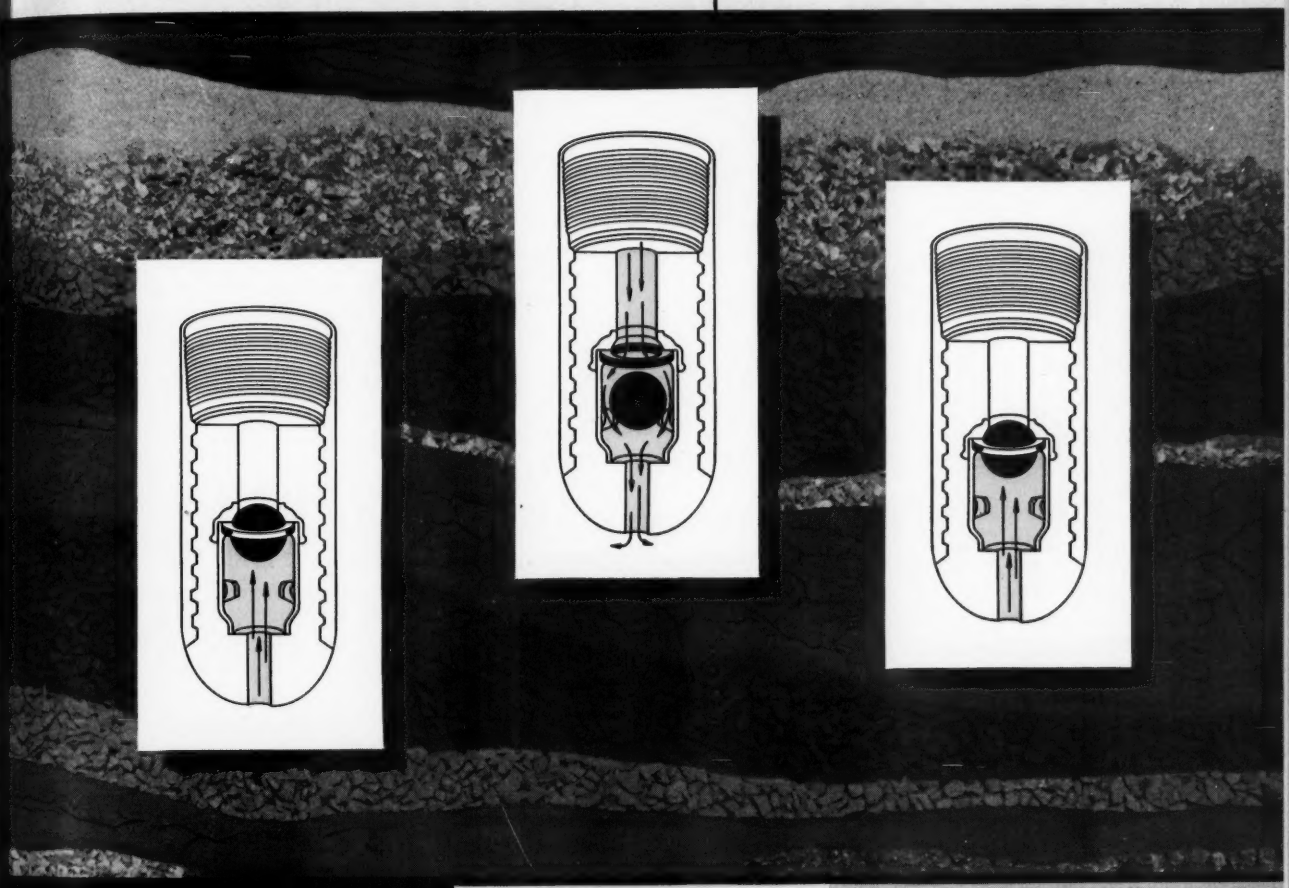

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California Oil and Taxes — Let's Be Fair!

As probably everyone in the oil industry is aware, the present state administration has proposed that a severance tax be imposed on oil and gas production in California.

The proposal is embodied in Assembly Bill 1174, which was introduced at the request of Governor Edmund G. Brown by the chairman of the Assembly Committee on Revenue and Taxation, Assemblyman Thomas J. McBride. If the bill is enacted in its present form, the California industry will be forced to pay a tax of 2% on the value of oil and gas at the wellhead.

Proponents of the tax seem to use two main arguments in its support:

That the industry does not pay its fair share of taxes in California; and

That other oil producing states levy severance taxes, but California does not. The implication is that the industry in California is escaping taxation of a kind that it is paying elsewhere, hence that a severance tax in this state is neither unusual nor unfair.

Neither of these arguments holds good in light of actual conditions.

Those who argue that the industry does not pay its fair share of taxes have thus far failed to substantiate their statements. They make the assertion; they fail to provide any information or facts to support it.

Those in the industry know that it pays taxes of every kind. It pays a state corporation franchise (income) tax; it pays city and county taxes; the people employed in the industry pay individual state income taxes. In addition, the industry acts as a tax collector for the state, handing the state six cents on every gallon of gasoline it sells to motorists using the state's highways.

These state and local taxes, exclusive of the gasoline tax, amounted to $111,052,000 in California in 1957, the latest year for which data are available.

The report of the State Franchise Tax Commissioner for 1956—latest available—on bank and corporation income taxes for that year shows that of 38 catgeories listed, only three: banks, retail trade, and the manufacture of transportation equipment, paid more income tax to the state than was paid by the producing branch of the oil industry.

The available facts would indicate, therefore, that the industry is paying its fair share of taxes. Furthermore, if any of these forms of taxation are increased, the industry will pay its share of the increase, just as all other industries and individuals will.

The second argument most often advanced in support of a state severance tax is that: other oil producing states collect it, why not California?

It is true that Texas, Louisiana, and Oklahoma levy a form of production or severance tax on oil and gas. But in each case, local taxes on oil and gas production are either non-existent or are negligible.

Including the severance tax, the producer in Texas pays about 20 cents per barrel on the oil he produces; in Louisiana he pays 18 cents; and in Oklahoma he pays 14 cents.

In California, however, in personal property, real property, and mining rights taxes, the producer pays 19 cents per barrel to the counties in which he produces oil.

In total taxes on oil production, the California producer pays more than his counterpart in either Louisiana or Oklahoma. He pays nearly as much as his counterpart in Texas, and if the proposed severance tax becomes law, he will be the highest taxed producer among all producers in the principal oil states of the nation.

Supporters of the proposed severance tax have failed to note this significant difference in oil tax levies in California and in the other oil producing states. In this state, oil production taxes are paid to the counties; in other states, to the state, with the present tax burden in California being as high as in any other state, for all practical purposes, and higher than in most.

Thus the "fair share" argument and the "other states" argument do not stand up under examination.

Fundamentally, the proposed severance tax is unfair for many reasons. It applies a special and unique tax to one industry which already pays the many taxes levied upon it in common with other industries. It is levied without regard to ability to pay—the low-output, high-cost well is taxed at exactly the same rate as the high-output, low-cost well. It is discriminatory. It pyramids tax on tax. It tends to drive California oil out of a highly competitive market. It tends to cause premature abandonment of marginal wells with consequent loss in reserves. It will discourage the future development of California oil. It makes taxes on California oil higher than in any other oil producing state.

And, as it tends to cause further deterioration in an industry whose revenues have been substantially reduced by a series of price cuts within the past year, it runs contrary to the national policy of maintaining a healthy and vigorous domestic oil industry in the interests of national security.

Monterey Opens District Office in Mississippi

Monterey Oil Company recently announced the opening of a Mississippi District office in Jackson, Miss., to facilitate active exploration in the state where the company holds an interest in 50 selected areas totaling approximately 76,000 acres.

Colman C. Casey has been named district manager with offices at 200 East Capitol Street. James D. Bryan, Jr., will be geologist for the area.

President Howard C. Pyle said the resurgence of Mississippi as one of the nation's more attractive regions for exploration is indicated by the high ratio of discovery of oil and gas in Lower Cretaceous formations during recent years. "Since the first discovery," Pyle stated, "exploration successes have been at a ratio of about 1 in 5, with many of the new fields giving promise of attaining major importance. Monterey began acquiring carefully selected leases several years ago, increasing its holdings as the possibilities of the area became more apparent.

"From our Jackson office we will be able to more closely coordinate our program of exploration. One well, Gaylord No. 1, is being drilled in Simpson County, on land in which Monterey holds an interest, through a farmout agreement with Southern Natural Gas Co."

Pyle said Ford M. Graham, Monterey vice president, will supervise the Mississippi exploration activity from the company's division office in New Orleans.

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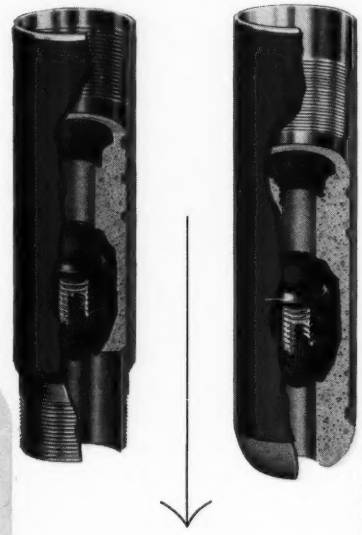

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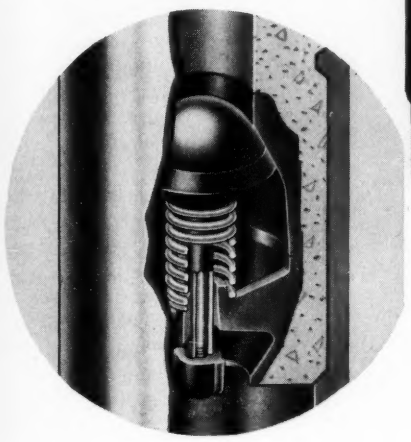

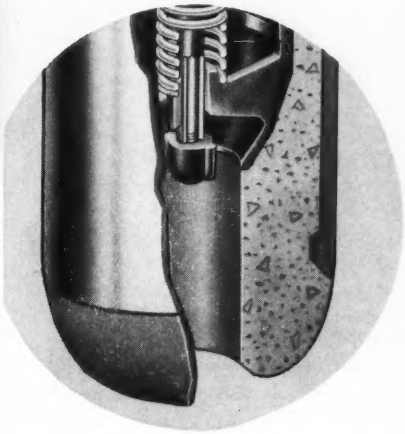

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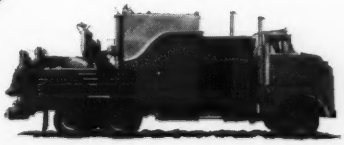

Petroleum LORE and LINGO

By RICHARD SNEDDON

The Potion Brewers

Just as the most meticulous earth scientists of the moment are direct descendants of the illogical diviners and doodlebuggers, so it may be said that the profound modern day chemist has evolved from the sorcerers and the potion-brewing witch doctors of the dark ages. The derivation of the word, chemist, has never been satisfactorily traced but it is believed to be of ancient Hebrew or Arabic origin and at one time to have signified a person who compounded poisons for the disposition of the unwanted, and love recipes for drugging emotionless ladies into ecstasies of affection. In the good old days there were practitioners of alchemy who believed that the baser metals could be transformed into gold, and some of them searched long and avidly for the "philosopher's stone" which was supposed to perform the transmutation by a species of magic, while others worked diligently with furnaces, caldrons, and crucibles to find some rational process for bringing the change about. Then came another group of theorists, quite convinced that when a substance burned, it merely lost its "phlogiston." This word they formulated from the Greek *phlogistos* which means "burning material."

Modern Transmutation

We know now that there is no magic wand or word that will change one metal into another but we also know that the alchemistic idea was not quite so crazy as we once thought it to be. For today uranium can be turned into radium and the radium into lead; nitrogen can be turned into oxygen; and a whole new series of substances named isotopes, are altering the world of chemistry in a fantastic way. We know now that there is no such thing as phlogiston but that burning and rusting are demonstrations of the same phenomenon, oxidation, the difference being merely in tempo. And we know now that when combustion occurs, nothing is taken away. On the contrary something is added, and that something is oxygen. These pioneers were wrong, but finding out that something is wrong is advancement; the least satisfying type perhaps but advancement nonetheless. In the hundred years that have elapsed since the petroleum industry began we have learned a great deal, about the composition of crude oil and the nature of its components. We have even learned how to transform these into others that are more suitable to our needs; so in effect we are accomplishing the dream of the alchemist by a somewhat different route.

The Arabian Influence

It is fairly obvious that alchemy is from the same root as chemistry. *Al* is the Arabian equivalent of the American definite article "the," and "chemy" is from *kimiya,* "brew" or "infusion." Many of our words that begin with the al- prefix are of Arabian origin. Algebra is from *al jabr,* "the joining again of broken parts"; albacore is from *al bukr,* "the young camel" (because of its size); and alcohol is from *al kuhl,* meaning "the fine powder" or "subtle essence," although there is nothing subtle about the essence to which we currently apply it. Subtle is from Latin *sub* "under" and *tela,* "a web," and it refers to a fineness, in this instance a delicate distinction of meaning that is little more than apparent. It would be about the reverse of obvious or noticeable. Meticulous is ultra-careful from the Latin *metus,* "fear." Sorcerers were persons endowed with power to foretell the future, sometimes by very odd means, always by exclusive dispensation from high authority, and at one time they must have been as numerous as sparrows at harvesting time.

More Diviners

There were those who could tell exactly what was going to happen a hundred years ahead, by observing the actions of gnats and swallows; necromancers who derived their information from the dead (Greek *nekros,* "a corpse" and *mantia,* "to divine"); haruspicoscopists who did the same by examining the entrails of animals offered as a sacrifice to various gods (Latin *haruspex* "entrail inspector," and *skopein,* "to see"); and hepatoscopists who could pierce the veil through the medium of livers obtained from the same source. They took their name from Greek *hepatos,* "liver." In these modern times one rarely sees a hepatoscopist any more, but theacomantists, chiromantists, and cartomantists, are commonly found at church bazaars and such. They do their forward looking via tea leaves, palmistry, and cards, from Latin *theacea,* "a tea plant," *chiros,* "a palm," and *cartos,* "a card."

Caldrons & Crucibles

Transmutation is conversion from one substance into another from Latin *trans,* "across," and *mutare,* "to change." Philosophers are lovers of knowledge from Greek *philos,* "loving" and *sophos,* "wise." It hardly seems necessary to bother about the derivation of such a well known word as "furnace" which comes from the Latin *furnus,* "an oven," but it is only by chasing down origins with which we are unfamiliar that we cultivate the habit and also that we run into the particularly interesting bits of etymology with which our language is loaded. A caldron is a large kettle from Latin *caldus,* "warm," and anyone who has ever been interested in the assaying of ores is familiar with the crucible which takes its name from Latin *crucibulum,* "an earthen pot for melting metals." Gold has been so named since the earliest times but it might be interesting to know that its chemical symbol is Au,

from the Latin *aurum*, "gold." It is also widely known as "filthy lucre" and although it has caused more trouble in this old world than original sin, it has been the most eagerly sought after commodity in the history of the human race.

With all its symbols, formulas, and equations, industrial chemistry is really not the involved science it would at first appear. The theoretical part is just a sort of commodity algebra in which symbols and numbers are employed to determine what, if any, reactions take place between various substances, the characteristics of which are known, when they are brought into contact with each other. The process is, of course, both qualitative and quantitative. It is true that the people who practice the art have a tendency to cloud the issue for the uninitiated by calling ordinary table salt "sodium chloride" and ordinary chalk "calcium carbonate," but as we shall see there is method in all this madness. Sodium chloride is merely a chemical union of two elements, sodium and chlorine; calcium carbonate is a similar union of three elements, calcium, carbon, and oxygen, and this process of addition can go on until the end product may be something like dichloro-diphenyl-trichloroethane (DDT), or monoethanolaminedinitrocyclohexylphenolate (another insect exterminator), and, indeed, it could ultimately go so far as to require that future books on chemistry be written sideways. Actually, despite such fearsome developments, it is quite possible for a lay person to acquire a reasonable understanding of petroleum chemistry, complex as it seems, if he or she has good digestion and can assimilate a few basic facts.

The Building Blocks

Scientists recognize about 100 elementary substances which can be combined in wide variety to form other substances called "compounds" (Latin *com*, "with" and *ponere*, "to put.") In the same compound, when pure, the same elements are always present in the same proportions. That is a fundamental law, as unchangeable as the fact that two and two make a foursome. Another law that must be understood is that the physical behavior of elements and compounds is always the same under the same conditions. It has been established, for instance, that pure water boils at 212 degrees Fahrenheit under normal atmospheric pressure (760 millimeters of mercury or 14.7 pounds per square inch), and it doesn't matter whether the water comes from Hong Kong or Kalamazoo, if it is pure, its boiling point will be 212°F at that pressure.

Chemical Symbols

The resourceful chemist saves himself a lot of time and energy by delegating a symbol (Greek *symbolon*, "a sign") to each element. Thus hydrogen is designated by the letter H; carbon by C; oxygen by O, and so on. When there are two or more elements having the same initial letter, he resorts to the addition of a second letter or to the use of the equivalent Latin term. Thus, since C has already been used for carbon, Cl becomes the symbol for chlorine: S stands for sulphur, so Si is used for silicon: gold is Au as already remarked; Hg is for mercury, from the Latin word for mercury which is *hydrargyrum;* and Ag is silver from Latin *argentum*. Hydrogen is a gas born of the decomposition of water, from Greek *hydor*, "water" and genes, "born," and it is interesting that hydrargyrum, meaning mercury is a combination of this same *hydor* and *arguros*, Greek for "silver" so it really means "silver water" which is a very apt name for mercury or quicksilver as we common people call it. Oxygen is the earth's most abundant element. It forms almost 90% of all the world's waters and 50% of the crustal rock layers. It was given its name by a famous French chemist, Lavoisier, who thought it was an essential constituent of all acids. He derived the word from the Greek *oxys*, "sharp" or "acid" and the same *genes* that we found in hydrogen.

Elementary Atomics

In reality, the single symbols such as those referred to in the preceding paragraph mean something more than the substances they represent. H means one atom of hydrogen; O means one atom of oxygen; the C means one atom of carbon. The symbols in combination are employed to denote compounds, and in such clusters are called formulas, or formulae, if you want to give the impression of scholarliness. And, lest we forget, that word "atom," in the light of progress in nuclear physics, is decidedly a misnomer. It came from the Greek *atmos* which means "indivisible," and since the atom has now been so torn asunder that you can have shredded atoms for breakfast, we should start looking for a name that fits better. "Nucleus" is another of these words we appropriated from the Latin unchanged. It signifies "a kernel" and comes originally from *nux*, "a nut." Nuclear physics is the science that deals with the structure of the atom . . . how its components are held together and how they can be pried apart. One of its principal parts is the kernel or nucleus.

Atoms & Molecules

Water to the chemist is H_2O which means that it is composed of two atoms of hydrogen and one atom of oxygen. The union of these atoms constitutes one molecule of water, and it becomes clear at this stage that the smallest possible quantity of an element that can exist and still retain all the characteristics of the element is an atom, while the smallest possible quantity of a compound that can exist and retain all the characteristics of a compound is a molecule. And it should be noted that two or more atoms of the same element can also combine to form a molecule. The suffix "-cule" is of Latin origin, and it means "tiny." A molecule, thus, is a tiny mole or mass from Latin *molus*, "mass."

Combinations

Every element has a definite combining capacity, or "valence" as it is known in the laboratory, which derives its name from the Latin *valens*, "having power." The unit of measurement in this case is the combining capacity of hydrogen. In other words, hydrogen is given a valence of 1 and all other valences are expressed in relation to that of hydrogen. Oxygen has a valence of 2 which indicates that it has twice the combining value of hydrogen; carbon has a valency of 4; so does lead, the symbol of which is Pb from the Latin *plumbum*, "lead"; and observe that nature has greatly simplified this entire valence business by arranging that atoms should always combine with each other in whole numbers, never in fractions. In no instance does one atom combine with a fifth or sixth of another. Always it is one with one, one with two, two with three, or some such combination of whole numbers. This is another chemical law, known as the "Law of Multiple Proportions."

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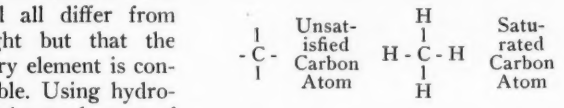
from a species of witchcraft to an exact mathematical science was Dalton's discovery that the atoms of which the elements are composed all differ from each other in weight but that the atomic weight of every element is constant and unchangeable. Using hydrogen, which is the lightest element of all, as the standard, and giving it an atomic weight of 1, the relative weights of all other elements have been established. Oxygen, for instance, is now known to have an atomic weight of 16; carbon has an atomic weight of 12; and platinum has an atomic weight of 195; so these three elements are respectively 16, 12, and 195 times as heavy as hydrogen. Since then we know the relative weights of all the different sorts of atoms and the proportions in which they combine with each other to form molecules, we have a numerical system that enables us to interact various atoms together with a foreknowledge of what the exact result will be from a qualitative as well as a quantitative viewpoint. We can tell in other words, if we start with measured quantities of the interacting substances, not only what products the interaction will yield but how much of each will be formed.

Graphic Formulae

Valence is graphically indicated by little side arms called bonds. Hydrogen being monovalent (Greek *monos*, "one") is shown with a single bond, thus, H-; O is bivalent (Latin *bis*, "twice") and is hence equipped with two bonds, in this manner, -O-. Each of these side arms represents the same valence quantitatively as that possessed by one atom of hydrogen. If we unite one bivalent atom of oxygen to two monovalent atoms of hydrogen, we have H-O-H which is the graphic formula for water, and if we add up the like symbols we get H_2O which is the common, or conversational formula. By the same token, carbon is a tetravalent element (the "tetra-" prefix comes from the Greek *tettares*, "four"). These bonds may be likened to magnetic forces that attract substances sharing special affinities for each other. Carbon and hydrogen, as we have learned, have such a common affinity, and they unite to form the several families of hydrocarbons that are the largely preponderant constituents of petroleum. Before and after pictures of a wedding between a tetravalent carbon atom and four monovalent hydrogen atoms are shown in the following manner:



Again adding up the like symbols in the graphic formula of the finished product, we get CH_4, the common formula of methane, the first and lightest of that very important series of hydrocarbons, the paraffins.

Building Up Process

The ingenious chemist has many ways of inducing atoms and molecules to unite. Some are so crazy about each other that he merely has to bring them together and they combine with explosive violence. Others are reluctant to form a union and the employment of heat, pressure, or additional chemicals, sometimes all three, is required to bring about the desired reaction. This process of building up can go on almost indefinitely, as indicated by the complexity of the moth-killing product that was named earlier in this chapter. One of the means by which it is accomplished is to dissociate the molecule, that is, to break it down into its constituents and then replace one of its parts with another component for which the remaining part has an even greater affinity. This again in some instances is simple and in others difficult. As an example of violent and spontaneous union, when a small piece of sodium (symbol Na, from Latin *natrium*) is dropped in a dish of water it sputters about in a series of small but rapid explosions as it combines eagerly with the hydrogen and oxygen in the water to form caustic soda (formula Na OH). During the action some hydrogen is released and at the same time considerable heat is generated which sets fire to the very inflammable hydrogen thereby amplifying and aggravating the general commotion.

Of Radicals

Salts of various kinds when dissolved in water become dissociated and their separated parts, known as radicals, are then in a more or less free state that renders them available for a new union. It is merely necessary to add a solution of sodium sulphate to a solution of calcium chloride to make the radicals trade companions. A heavy milk-like precipitation of insoluble calcium sulphate (gypsum) takes place, and the other two radicals, sodium and chloride, unite and remain in solution. Radical is from Latin *radicalis*, "root" and in chemistry it means a basic group of atoms with at least one unattached bond, which can be the root or foundation of endless new compounds.

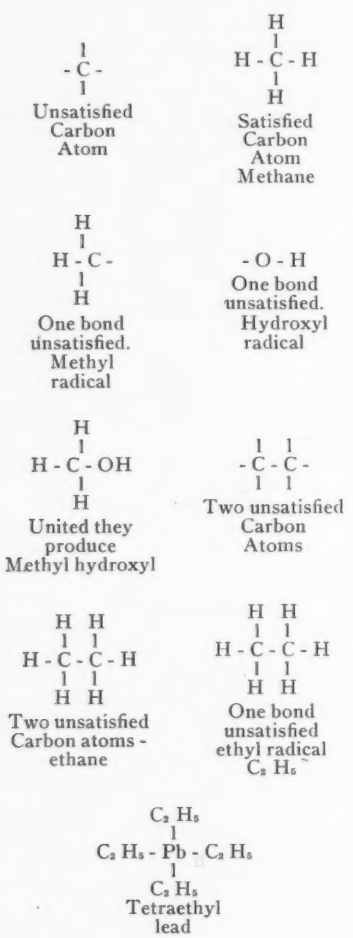
Radicals Short Lived

Radicals, as such, do not actually have a very long life. They are intermediate products that have a fleeting existence during the inevitable processes of chemical exchange. For instance, if by one of his multitudinous methods of subtraction, the chemist were to take one atom of hydrogen away from water or H-O-H, he would be left with the term -O-H. That OH combination with one free or unsatisfied bond is a radical, known as the hydroxyl radical, but it won't remain a radical very long because oxygen is a very affectionate element and the instant one of its affinities comes within reaching distance—the free bond will grab it and the bonds will again be satisfied.

Hydrocarbon Radicals

Looking again at methane (CH_4), the lightest member of the paraffin series of hydrocarbons, we find that if one hydrogen atom be removed by some means from this compound, we have left another radical with a free bond, CH_3-. This is the methyl radical, and like the hydroxyl one will not long remain in its unsatisfied state. In fact, having one free bond each, or being monovalent as the chemist says, if they came together under the right circumstances the two radicals could join together and form CH_3OH which is methyl or wood alcohol. Most of the chemical radicals are given that "yl" suffix which identifies them as building blocks because it really comes from *ylem*, a word that the Greeks once used to denote the material of which the elements were formed. Just to carry the substitution business a degree further, the next member to methane in the paraffin series of hydrocarbons is ethane. Its formula is $C_2 H_6$ and if we knock a hydrogen atom off that one we get $C_2 H_5$-. This is ethyl and if we had four ethyl groups and could find a tetravalent element to satisfy the four free bonds, we could make a new compound. Now lead (Pb) is a tetravalent compound and can, therefore, satisfy the four free hydrogen bonds in the

four ethyl groups, thus giving us $(C_2H_5)_4Pb$, or tetraethyl lead, a name with which every oil man and every motorist is now thoroughly familiar. This is all shown much more simply in graphic form, in the accompanying illustrations:


Unsatisfied Carbon Atom
Satisfied Carbon Atom Methane
One bond unsatisfied. Methyl radical
One bond unsatisfied. Hydroxyl radical
United they produce Methyl hydroxyl
Two unsatisfied Carbon Atoms
Two unsatisfied Carbon atoms - ethane
One bond unsatisfied ethyl radical
Tetraethyl lead

Shell Sells Properties to Sunset

Sunset International Petroleum Corporation has acquired the Shell Oil Company interests in the Santa Ana & Fresno Land Co. and Properties, Inc., leases in the Raisin City, California, field. The properties, including 110 acres and 16 oil wells, are adjacent to existing Sunset International leases in Raisin City which are presently producing more than 1000 gross barrels per day. The newly acquired properties produce approximately 90 gross and 70 net barrels per day. Morton A. Sterling, Sunset International's president, said his company plans to rework 11 of the wells which are presently idle.

Oil Men Participate in Industry-Education Week

The Oil Industry will be well represented when the school bell rings for the Santa Fe Springs Industry-Education Week. This third annual "Week" will be held May 4 to 8. Many of the local oil and service companies assist the Greater Santa Fe Springs Industrial League and the local high school in presenting the program. General chairman of the 1959 "Week" is J. M. McFadden, treasurer of Fluid Packed Pump Company.

The program is designed to create better understanding of industry, to benefit industry and education through the exchange of information, and to provide teachers and students with realistic and up-to-date information about vocations in modern industry.

Included in this year's program will be tours of industries by students and teachers, tours of the school by members of the League, exhibits prepared by local industry, scholarship awards of shares of stock to the outstanding senior boy and girl at the high school and an on-the-job observation program for selected students.

Teams of industrialists will visit school classes to discuss vocational information, and personnel directors from the League will conduct mock job interviews in school classes.

"We feel that this program will acquaint our youth with the promises and problems awaiting them in the industrial world," stated David Hearn, president of the Hearn Company and public relation chairman of the 'Week.' "And since it stimulates interest in industry, we feel it is a vital and important program." Other Santa Fe Springs Oilmen participating in the program include: R. I. Plomert, Jr., General Petroleum; Scott Temple, Union Oil Company; R. L. Packer, Bell Petroleum Company; H. C. Daudistel, Wilshire Oil Company, and W. R. Miller, Standard Oil Company.

"We are grateful to men of the Oil Industry for their continued participation in this community project," states C. W. Roberts, Sr., of Universal Fabricating Company, president of the Greater Santa Fe Springs Industrial League.

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Collier Carbon and Chemical Corp. Announces Company Officers

Collier Carbon and Chemical Corporation has announced its elected company officers for 1959.

W. L. Stewart, Jr., is chairman of the board and **Robt. T. Collier** is president. **Wm. C. Kaesche** is executive vice president.

Other officers include: **Homer Reed, Robert S. Ray,** vice presidents; **Howard W. Wright,** secretary; **Paul Foreman,** treasurer and assistant secretary; **Frank H. Dlouhy,** comptroller and **R. G. Griep,** assistant comptroller.

Collier manufactures carbon and petro-chemical products.

Headquarters for the organization are in Los Angeles.

Dr. Neil H. Jacoby, former special economic advisor to President Eisenhower and United Nations Representative, has been appointed to the Board of Directors of Occidental Petroleum Corporation of Los Angeles, it has been announced by Company president Dr. Armand Hammer.

Midwestern Oil and Gas Corp. has announced the election of **Joe Orloff,** Los Angeles attorney, as President of the corporation. He was formerly associated with both Aeco Corporation and Nordon Corporation as Secretary and Chief Counsel.

Midwestern Oil & Gas Corp., which acquired the properties of Coloriver and Western Crude Oil Companies, has a program to expand its activities to include actual field operations in the exploration, development and production of oil and gas properties in California, in addition to its plan for the exploration of its Rocky Mountain properties.

Dr. Edward F. Ryan, President of Capital Company, has announced the election of Thomas S. Minney to the Board of Directors of this wholly owned subsidiary of Transamerica Corporation. Mr. Minney is Vice President in charge of the Oil and Gas Division of the Capital Company, and makes his headquarters in Los Angeles.

Personalities IN THE NEWS

Dr. Orville L. Polly

T. F. Scoggins

Dr. Polly Promoted by Union

Dr. Orville L. Polly has been promoted to senior research associate at the Union Research Center, Brea, California, according to an announcement by **Fred L. Hartley,** vice president of research, Union Oil Company of California.

T. F. Scoggins Named Public Relations Manager Tidewater Oil Company

T. F. Scoggins has been named public relations manager of Tidewater Oil Company, president **George F. Getty II** announced recently.

For the past ten years Scoggins has been in the Shell Oil Company public relations department with assignments in San Francisco, New Orleans and Los Angeles.

Prior to 1949, Scoggins was editor of several magazines published by Home Book Publishers in San Francisco and assistant advertising manager of Lawrence Warehouse Co.

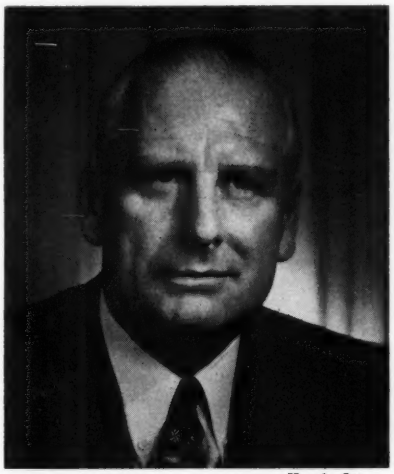
Scoggins is active in Western Oil and Gas Association affairs and is a member of the Los Angeles Superintendent of School's Joint Central Committee on Industry-Education.

Robert **B. Hutcheson,** for many years Chief Paleontologist and Manager of the Geological Laboratory for The Superior Oil Company of California, has been placed on retainer by The Superior Oil Company and is available for consulting work. He has opened an office at 3120 Eighteenth St., Bakersfield, California.

Taylor Named Director of Bank

Reese H. Taylor, chairman of the board of Union Oil Company of California, has been elected a director of Manufacturers Trust Company, it has been announced by **Horace C. Flanigan,** chairman of the board of the bank.

Mr. Taylor also is a director of the American Petroleum Institute, the Collier Carbon and Chemical Corporation, and Westinghouse Electric Corporation. He is a member of the Business Advisory Council for the Department of Commerce and a trustee of the University of Southern California and of Loyola University of Los Angeles.



Karsh, Ottawa

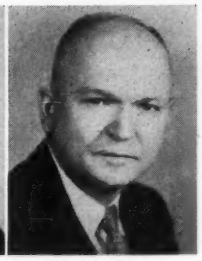
Reese H. Taylor

Pegors Promoted by Welex

Welex, Inc., recently announced the promotion of **Harry R. Pegors,** former field engineer, to district manager at Bakersfield, Calif.

Pegors, who has been with Welex since 1952, is a native of Torrance, California, and has a geology degree from the University of Southern California.

Robert E. Masters



Wesley Klatt

Motor Company Advances Klatt

Wesley Klatt has been named manager of engineering records at the Waukesha Motor Company. In his new position, Klatt will direct the operations of the specification department, the preparation and release of new parts and components directives, standardization and interchangeability records, power curve data, and engineering specifications and records in general.

Klatt joined the Waukesha Motor Company engineering department in 1929. In 1950 he was named installation engineer. He has a background of wide experience with internal combustion engines, having been associated with their design and development in connection with his duties at the Motor Company and his activities on technical committees of the Society of Automotive Engineers.

Grant Names Masters Vice President

Election of **Robert E. Masters** as a vice president of Grant Oil Tool Company has been announced. Masters is general manager of the MacClatchie Division, manufacturers of mud pump valves, pistons, Spiro pipe wipers, quick-change cement heads, quick-unions and other oil field equipment.

Masters joined MacClatchie in 1954 as assistant manager and became manager in 1957.

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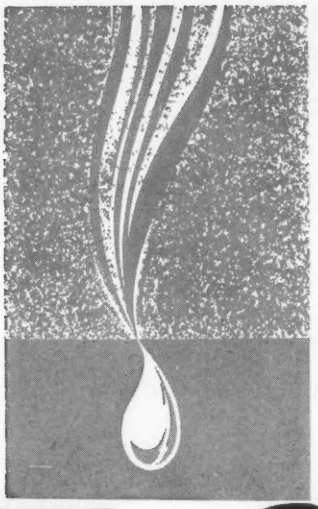

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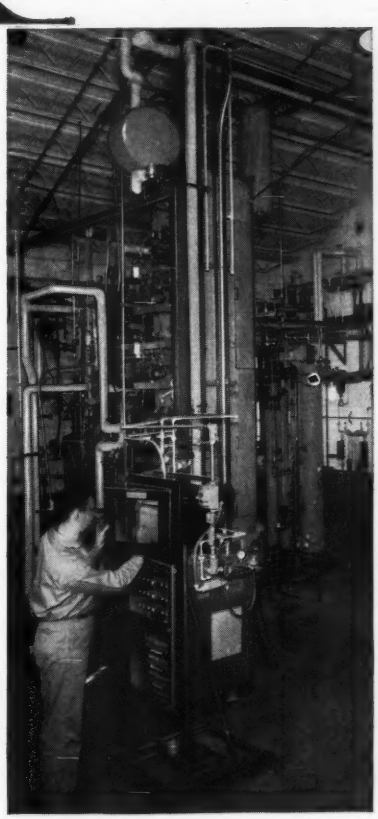

Part of facilities used in pilot plant stage of developing and proving Molex process.

UNIVERSAL OIL PRODUCTS COMPANY

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"OIL ACCOUNT" AGENTS — Scandinavian Airlines System held its annual "Royal Viking Award" dinner recently at the Bel-Air Hotel. The coveted designation "Royal Viking Agent" is awarded each year by the airline to the one hundred outstanding revenue producing travel agents in the United States. Those agents who specialize in handling oil accounts are pictured receiving their awards. From (l. to r.) Bob Sawyer, Manager of Commercial Sales for SAS; Meta Sherman, Meta Sherman Travel, Woodland Hills; and Godfrey King, National Travel, Los Angeles. George Hedman, Director of Public Relations for the airline, was the feature speaker.

Statement By Russell B. Brown, General Counsel, IPAA

After more than 10 years since the initiation of the Phillips Natural Gas case a Federal Power Commission examiner on April 6, 1959 rendered his decision. The commission has been studying the case since 1954, the year of the Supreme Court decision. If adopted by the Power Commission it would constitute an outstanding example of the consequences of the effort of a Federal bureau to exercise regulatory authority, where no legislative standards are provided.

The results would be a "dog-fall" in which neither party gains; all parties lose. The consumer will be charged an increased rate for the gas he buys; the producer is denied the right to enter into arm's length contracts for the product of his effort, and the nation is the loser as domestic producers are discouraged from exploring for and developing new reserves.

In disallowing the established method of providing for depletion, a bureau created by the Congress has overridden the authority of Congress to provide tax laws governing industry activities.

The confusion resulting from this decision can only be clarified by reasonable legislative provisions similar to those that have previously been passed and approved by Congress.

Eight Nominated For Special Awards at I.P.E.

Eight pioneer oil men were chosen from nominations received from the oil industry for special awards during the International Petroleum Exposition, May 14-23, according to an announcement by William J. Sherry, chairman of the IPE "Old Timers" committee.

The traditional ceremony honoring the pioneers on "Old Timers" day May 17th during the show had its inception in 1927 by the late John D. Rockefeller when he first presented the awards.

William L. Connelly, Tulsa, one of the founders of Sinclair Oil & Refining Corp., was named "Pioneer of Pioneers." The 86-year-old Connelly, who drilled his first well 64 years ago, is one of the best known oil figures in the nation.

Seven "Grand Old Men of the Oil Industry," each representing a division of the industry will share the spot light with Connelly at the special ceremony. They are: Edmond C. Breene, Oil City, Pa.; William A. Cassidy, Bayonne, New Jersey; Edward I. Hanlon, Tulsa; Frank J. Hinderliter, Tulsa; Wiley B. Hissom, Tulsa; Frank H. Lerch, New York; and S. Miller Williams, Robinson, Ill.

Imperial Acquires Laboratories

Imperial Development Company, Ltd., has acquired the B. C. Laboratories of Bakersfield, California, it was announced by **Clarence A. Ray**, president.

B. C. Laboratories, a partnership established in 1949, is one of the leading core analysis laboratories serving the oil industry. It is also prominent in the agricultural field as consultants to extensive farming interests in Kern County, and in the analysis of soil, water, fertilizer and feed. It assists in the reclamation of marginal lands, "control growing" and other farm feed problems. The new subsidiary will greatly complement Imperial's farming activities.

The staff, headed by **J. J. Eglin** and **D. A. Griesel**, both well known in oil and agricultural circles, will continue in their respective positions.

"This acquisition places Imperial Development in a firmer national and international position, and is part of our planned diversification program," Ray stated.

IPAA Midyear Meeting In Phoenix, May 4-5

Leading industry and government figures will take part in the midyear meeting of the Independent Petroleum Association of America which will attract oil and gas producers from throughout the country. The meeting will be held in Phoenix, May 4-5.

A record attendance for the midyear session is expected because of numerous "live" issues facing the industry, said IPAA officials. Some 250 oil men will attend advance meetings of policy and technical committees slated for four days in advance of the general sessions, April 30 through May 3.

Gov. Paul Fannin of Arizona will be the keynote speaker in the two-day meeting which is the first the 30-year-old national oil trade association has held in this state. Fannin will deliver a welcoming address to the organization.

H. S. M. Burns, New York, president of Shell Oil Company, and chairman of the board of directors, American Petroleum Institute, will be the luncheon speaker on the opening day. Widely known throughout the industry, Burns joined Shell in the 1920's as a geophysicist. He became president of the company in 1946.

Also on the opening day program will be Representative Hale Boggs of Louisiana, a member of Congress since 1940 except for three years in the armed forces during World War II. Rep. Boggs is a member of the House Ways and Means committee, where he has been particularly active in the fields of taxation and foreign trade.

Gordon Simpson, IPAA president of Dallas, Tex., and Russell B. Brown, Washington, D. C., general counsel, are on the May 4 program. Simpson will report on organization activities. Brown will discuss the legislative outlook as it affects the industry.

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Du Pont to Exhibit New Products at Petroleum Congress

Du Pont products for the petroleum industry, ranging from explosives and special photographic films for seismic prospecting to chemical additives that help make better finished products, will be shown in a 100-foot-long exhibit at the Fifth World Petroleum Congress in New York City early this summer.

Exhibits alone will occupy two floors of New York's huge Coliseum, while two more floors in the new exhibit center will be devoted to technical sessions at which more than 250 scientific papers will be presented.

Six of the Du Pont Company's 12 manufacturing departments will participate in the week-long commercial exhibits.

Among Du Pont products to be featured in the company's exhibit are a number of aids to seismic exploration, such as "Cronar" recording film, Lino-Flex film, "Cronaflex" engineering reproduction films, "Nitramon" blasting agents, and "Elcord" explosive delay units.

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Kern County Oil Man Honored by D. & D. Club

Glenn C. Ferguson, independent California oil producer, and Mrs. Ferguson will be guests of honor at the fifth annual Golden Derrick Ball, May 2, at the Bakersfield Country Club, it was announced by Mrs. Earl Hampton, president of the Bakersfield Desk and Derrick Club, sponsors of the spring event.

Each year Bakersfield D and D recognizes a Kern County oil man for outstanding achievement. This year we are proud to recognize a man who exemplifies the courage and initiative of the independent oil producer as our guest of honor at the 1959 Golden Derrick Ball, Mrs. Hampton stated.

Glenn Ferguson's name, she continued, is synonymous with the McDonald Anticline field in Kern County from which his company, Ferguson and Bosworth, is producing more than 1300 barrels a day.

As president of the San Joaquin Valley Oil Producers Association he is spokesman for more than 200 California oil men representing all branches of the industry.

He is also chairman of the Oil Committee of the Greater Bakersfield Chamber of Commerce. Under his leadership both organizations are working vigorously to promote understanding of the conditions of the industry on the part of the public and of government officials on a local, State and National level.

Glenn Ferguson himself attributes his success as an oil man to his failure as a salesman. While still employed in the geological department of a major oil company he recommended the McDonald Anticline on the West Side of the San Joaquin Valley as a likely spot to find oil. Despite his convictions, the play was rejected. Fifteen years later, as head geologist and owner-partner of his own oil firm, the Bakersfield oil man saw his judgment vindicated with his company's completion of a well flowing 500 barrels a day of clean 30° gravity oil. Production is now coming from more than 40 wells open to 11 distinct geological zones in a highly faulted and complex anticline structure.

OUTSTANDING OIL MAN—Glenn C. Ferguson, left, was selected by the Desk and Derrick Club of Bakersfield to be the guest of honor at the 1959 Annual Golden Derrick Ball, May 2, at the Bakersfield Country Club. Ferguson and his partner, I. W. Bosworth, seated, drilled the discovery well and subsequently more than 40 successful wells producing from 11 distinct geological zones in the McDonald Anticline field in Kern County. According to D and D club president, Mrs. Earl Hampton, the Bakersfield oil women's group extends an honorary invitation annually to recognize outstanding achievement on the part of a Kern County oil man.

The Nomad building at the International Petroleum Exposition grounds at Tulsa, Oklahoma is now officially open in preparation for the May 14-23 show. Shown left to right are Arch F. Campbell, headquarters manager, and his secretary, Miss Evalynne Corey, as they tackle the details of registration for the more than 1,500 foreign delegates from 42 different countries who will attend the show. Miss Corey, former secretary in the United Nations for the Saudi Arabian delegation, was secretary for Crown Prince Faisal, now ruler of Saudi Arabia Kingdom.

Guest speakers and international guests at the regular monthly meeting of the Los Angeles Chapter of Nomads, April 8, 1959. Left to right (standing) H. M. Heath of Colombian Petroleum Company from Colombia; Ralph Hill of Title Insurance & Trust Company; Joe E. Myers of Camay Drilling Company from Libya; (seated) Barney A. Horan of Basra Petroleum Company from Iraq; speaker of the evening, Norman A. Woest of Title Insurance & Trust Company; A. S. Mekkawy of C.O.P.E. from Egypt.

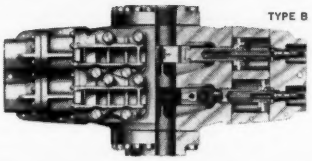
SHAFFER EXHIBIT

for the

LATEST ADVANCEMENTS IN BLOWOUT PREVENTERS!

WHERE ▶ *International Petroleum Exposition at Tulsa*
Oklahoma Building, Booths 1, 2, 76 and 135
(Both sides of the aisle—West end of the building)

At the 1959 Tulsa Oil Show you'll find the really important advancements in blowout prevention equipment concentrated in one big exhibit featuring Shaffer products. The equipment highlighted here is typical of what you'll see!



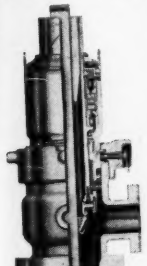
SHAFFER TYPE B and TYPE E BLOWOUT PREVENTERS

...the hydraulic control gates that offer many unequalled advantages for most drilling operations. Type B has *non-rising* locking shafts for installations where maximum compactness is desired...Type E has *rising* locking shafts for installations where quick indication of ram position is desired.

■ **Both types feature the convenience of "Swinging Side-Opening" doors for easy ram changes without loss of operating fluid...and positive "In-Line', ram and piston design that eliminates yokes, levers and other complicated assemblies!**

These and many other Shaffer advancements make Type B and Type E Hydraulic Gates ideal for the great majority of drilling operations!

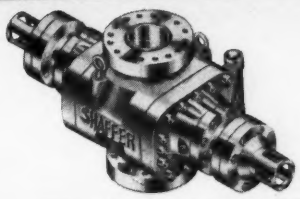
SHAFFER ROTATING BLOWOUT PREVENTERS AND STRIPPERS



...the blowout preventers that maintain continuous pressure control *automatically* as long as the drill string is in the hole. A self-adjusting Stripper Rubber automatically expands and contracts to fit the varying diameters of drill pipe, couplings and tool joints, as well as the varying shapes of square, hexagon and octagon kellys.

■ **There's nothing to remember—or forget—with this unit because it is always packed off around the drill string as long as the drill string is in the hole, whether the string is rotating, being raised or lowered, or is stationary!**

Shaffer Rotating Blowout Preventers and Strippers are ideal for regular drilling, for drilling under pressure and for drilling with air or gas instead of mud. Get full details on these applications at the Tulsa Oil Show!



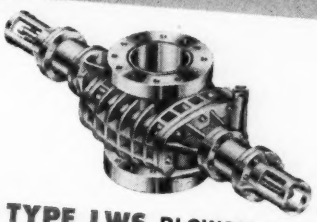
SHAFFER TYPE XHP BLOWOUT PREVENTERS

...the hydraulic control gates that handle *extra high* well pressures with new convenience and safety. Three sizes are available...7-1/16" bore size for *working* pressures to 15,000 PSI (each unit individually tested to 22,500 PSI!)...and 9" and 11" bore sizes for *working* pressures to 10,000 PSI (tested to 15,000 PSI!).

■ **XHP Preventers are the simplest of all Extra High Pressure units—are easy to install, easy to operate. They feature "In-Line" ram and piston design with no levers, yokes or other complicated connections between piston and ram!**

■ **XHP Preventers are also very easy to service. Their "Swinging End-Opening" design assures quick, simple ram changes without loss of operating fluid and without need for breaking any hydraulic connections!**

These and many other advancements place XHP Preventers far ahead in protection against Extra High Pressures!



SHAFFER TYPE LWS BLOWOUT PREVENTERS

...the hydraulic control gates that bring modern pressure protection to entirely new applications. Light in weight and easy to install, Type LWS Preventers are ideal for quick "in-and-out" production and re-work jobs where minimum rig-up time is a vital factor.

■ **LWS Preventers can be opened or closed in 15 to 20 seconds, using a Shaffer portable hand pump that eliminates need for the usual hydraulic piping and accessory equipment. If preferred, LWS Gates can be opened and closed in as little as 2 to 7 seconds with a choice of hydraulic power units.**

■ **LWS Preventers have all the latest Shaffer design features..."Swinging End-Opening" doors for maximum speed in making ram changes ...positive "In-Line" ram and piston design that eliminates yokes, levers and other complicated parts ...and many other exclusive Shaffer advancements.**

For unequalled portability in control gates, be sure to see Type LWS Preventers!

IN ADDITION to pressure control equipment, the Shaffer exhibit will also show operating models of Shaffer Bumper Safety Joints, Shaffer Jar Safety Joints and other unique down-hole drilling and fishing tools...as well as Shaffer Kelly Cocks, Shaffer Flow Beans and other outstanding Shaffer products!

DON'T MISS THE SHAFFER EXHIBIT!
(Tulsa...May 14-23)

36 years OF OIL TOOL LEADERSHIP

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HIGH PRESSURE DRILLING AND CONTROL EQUIPMENT • FISHING TOOLS THAT EXCEL

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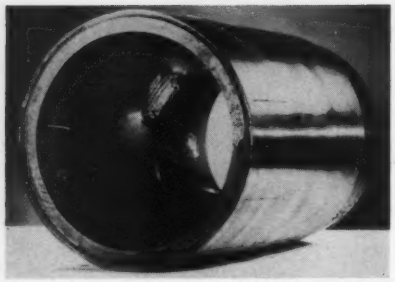
HOUMA, LOUISIANA, Shaffer Tool Works, Post Office Box 827
[illegible] Shaffer Tool Works, 500 Fifth Avenue, New York, N. Y., U.S.A.



After being slammed six times with a 4,000-pound steam hammer the Buttress Thread joint is buckled and the ends telescoped together, but the joint is still intact. National Tube says its Buttress Thread joint is as strong as the casing itself. It was developed to meet the rigorous conditions imposed by today's deep-well drilling.

New Deep Well Coupling On Exhibit at Tulsa

A jarringly brutal shock test designed to simulate the shattering impact sustained by a string of pipe in a deep well has been developed by U. S. Steel's National Tube Division. The test will be demonstrated at the International Petroleum Exposition at Tulsa, May 14-23.

Test pieces in National Tube's unique test are two lengths of its 7⅝" O. D. super deep-well casing threaded into a super deep-well coupling. All pieces are equipped with National Tube's patented Buttress Threads.

With the casing protruding two inches on each side of the coupling, the test piece is put under a 4,000-pound steam hammer and slammed six times with every ounce of energy in the hammer. The resultant distortion is mute evidence that this is as great a load as any joint will encounter in oil field service.

Although the threads pile up over each other as the sections meet and mash together and the coupling bulges out of shape, the Buttress Thread coupling remains secure.

National Tube has chosen this test, one of the many it uses on its threaded joints, to demonstrate to IPE visitors that its Buttress threaded and coupled joints are more than ready to stand up under the tough deep-well stresses encountered in modern drilling.

The Buttress Thread joint owes its strength to the combined effect of completely engaged runout threads and a minimal three degree flank angle on the thread which virtually eliminates the V-notch effect on joint strength.

The Buttress Thread joint, according to National Tube, is as strong as the body of the casing.

Trends in the Oil Industry

Few periods have been as eventful for the oil industry as the past 3 months, says The Value Line Investment Survey. Important developments were:

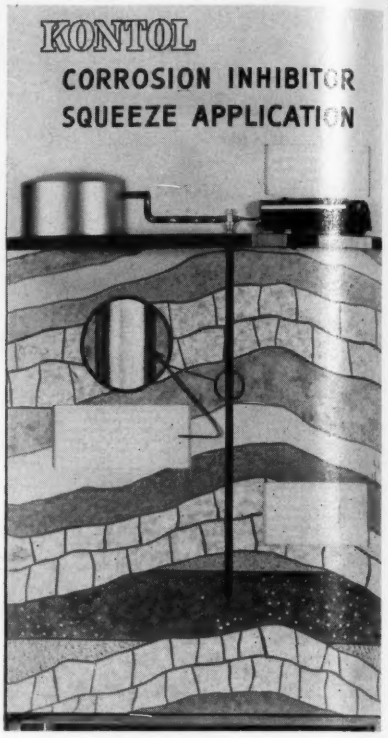
(1) Higher taxes in Venezuela, leading to the "60-40" (from "50-50") profits split. This has raised the spectre of similar profit-sharing rearrangements in the future in the Middle East to the detriment of companies with sizable interests in the oilfields there.

(2) Price cuts on foreign crude oil. This highlights the intensifying struggle among important oil sources abroad to find marketing outlets for their crude, now in great oversupply.

(3) Imposition of mandatory import quotas in the United States. Although the new crude ceiling is only about 2.5% below actual 1958 crude oil imports and affects residual oil imports scarcely at all, it will require a large reduction in imports of other finished products. Embodied in the mandatory program is a provision to enlarge import quotas if domestic petroleum prices increase unduly.

(4) Firmer demand, firmer prices in the United States. Cold winter weather has boomed domestic demand for fuel oil. Rising industrial output is absorbing increasing quantities of residual oil.

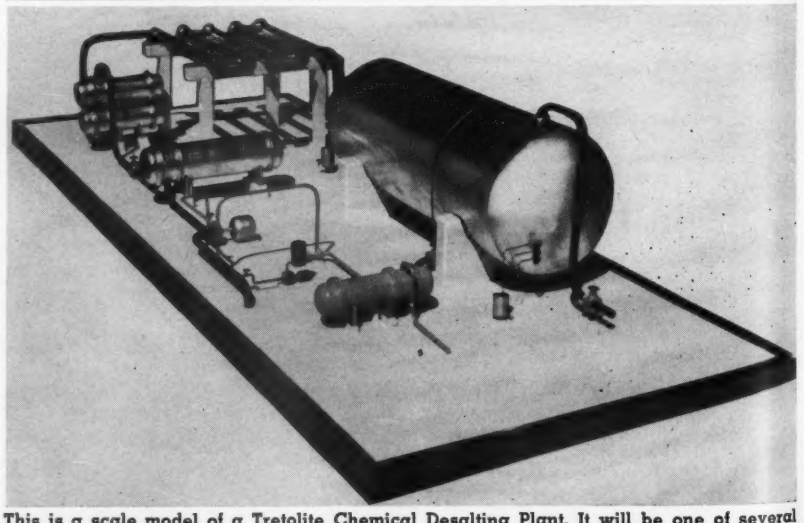
As a result of these developments, the Value Line Survey states, all segments of the domestic oil industry should fare well in 1959.



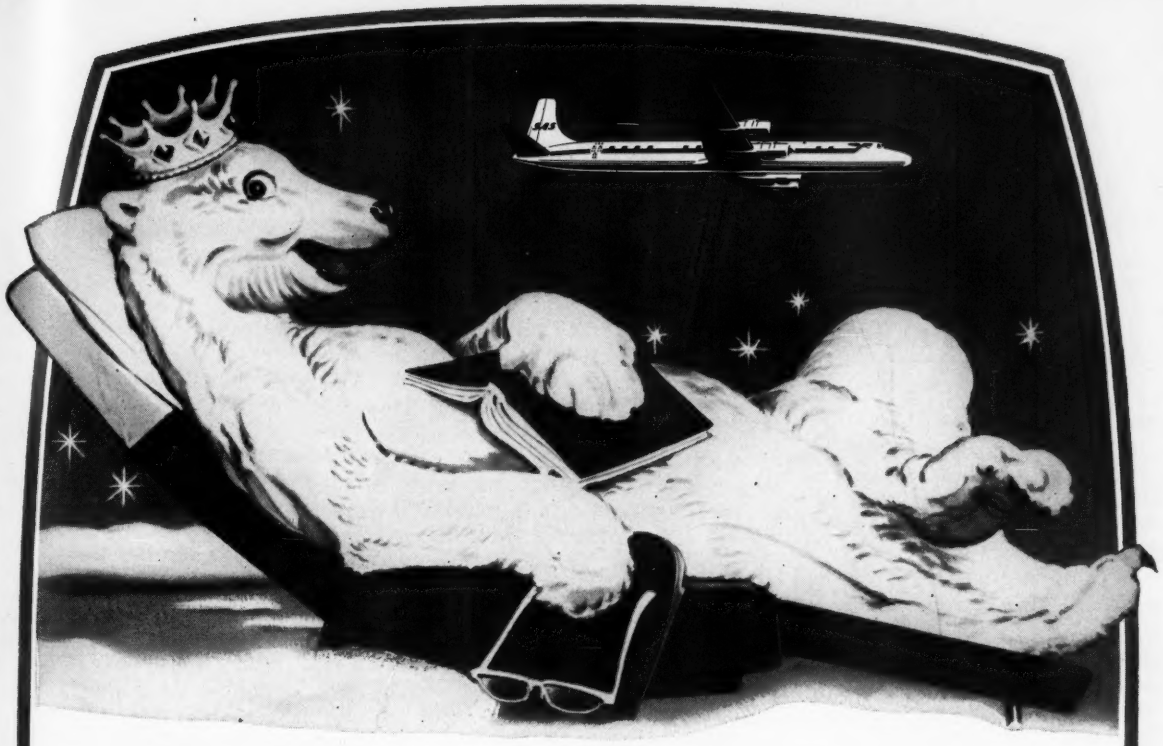
One of the outstanding features to be exhibited in the Petrolite Corporation Building at the International Petroleum Exhibit in Tulsa, May 14-23 will be Tretolite Company Division's animated demonstration showing the application of the Kontol Corrosion Inhibitor Squeeze Method.

The operational model demonstrates the injection of the inhibitor through the tubing into the formation where it adsorbs to formation surfaces. As the well is produced the Kontol slowly de-adsorbs maintaining the protective film on the tubing. After showing this entire operation the complete cycle is then repeated.

The unit stands slightly over 4 feet in height and is approximately 2 feet wide. The tank and truck are in half relief.



This is a scale model of a Tretolite Chemical Desalting Plant. It will be one of several models used to demonstrate equipment and processes of Petrolite Corporation's two divisions—Petreco and Tretolite Company divisions, at the International Petroleum Exposition in Tulsa, May 14-23.



TIME SAVER!... *Fast, direct connections to the Middle East via SAS Polar Route.*

On *SAS,* you save from hours to an overnight stop as you fly the polar route directly to Copenhagen, then make fast direct connections to all the Middle East. And you enjoy *SAS* luxury all the way – Continental cuisine, spacious berths, regal service – with famed DC-7C Royal Viking de Luxe at your service across the pole.

Fly SAS CALIFORNIA TO COPENHAGEN, ROME, ALL EUROPE ... BAGHDAD, ABADAN, TEHERAN, BASRA, ALL THE MIDDLE EAST ... AND ALL THE FAR EAST.

CONVENIENT MIDNIGHT SAS DEPARTURES from Los Angeles give you a whole day at the office, then plenty of time to pack and get to the plane conveniently.

STOP OVER AT EXTRA CITIES at no extra fare, including London, Paris, Rome, Copenhagen, on your *SAS* round trip. Perfect for business or pleasure.

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Jet Caravelle Service starting May 15th, subject to government approval.

Field Development

Pacific Coast and "4" Corners

LOS ANGELES BASIN

Two Castaic Tests For Ohio

The Ohio Oil Company is grading locations for two wildcat tests in the Castaic area. Austin Estate No. 1 will be drilled in the southwest quarter of Section 27-5n-17w and Romero No. 1 in the northeast quarter of Section 21-5n-17w.

Union Abandons Town Lot Test

Union Oil Company has abandoned Union-Signal-Texam U-19 No. 1 at a total depth of 9663 feet. Located in Section 35-1s-14w near the intersection of 18th Street and Western Avenue, the test was first drilled to 5734 feet, plugged to 850 feet, and redrilled and deepened to its abandoned depth of 9663 feet.

Newhall-Potrero Shell Test

Shell Oil Company has started Ferguson No. 2-7 in Section 31-4n-16w on the easterly flank of the field.

San Gabriel Test Abandoned

Humble Oil & Refining Company has abandoned its second try in the area. South San Gabriel Unit One No. 2 in Section 24-1s-12w at a total depth of 4600 feet. The well was sand frac'd and pump tested before abandoning.

Aliso Test For Standard

Standard Oil Company is drilling below 2000 feet on Orcutt-Sesnon-Line Well No. 1, a field well located in the northwest quarter of Section 28-3n-16w.

Bouquet Canyon Test Resumes

Solar Basin Oil Company has resumed operations on B. & R. No. 1 and is preparing to run 7" casing to 4800 feet. Located three miles northeast of Saugus in Section 7-4n-15w, the test has been standing idle at the present depth of 5310 feet.

Beverly Hills Completion

Signal Oil and Gas Company has completed Signal - Richfield - Rancho No. 3 flowing 185 bbls. net in 12 hours with 475 mcf of gas from a 610 foot perforated interval at 9500 feet. Total depth of the well is 10,259 feet.

Wilmington Completions

Cooper and Brain completed Wilmington No. 11 located in Section 29-4s-13w flowing 150 b/d of 30 gravity oil cutting 0.7 percent through a 17/64" bean from a total depth of 5448 feet. 6⅝" casing is cemented at 5257 feet.

Morton and Dolley completed two wells in the field. Well No. 33, near the intersection of Q and Gulf Streets, was completed pumping 165 b/d cutting fifty percent from a plugged depth of 5292 feet, with 6⅝" casing cemented at 4846 feet. The company's Well No. 59 was placed on the pump good for 175 b/d with 1.3 percent cut from a total depth of 5368 feet, and has 7" casing cemented at 5204 feet.

SAN JOAQUIN VALLEY

Tejon Hills Test

Sunset International Petroleum Corp. has started Sunset-Tejon No. 99, a 600 foot test in Section 11-11n-18w.

Tejon Wildcat For Reserve

Reserve Oil and Gas Company is drilling W.-S.P. No. 318-15 located in the southwest quarter of Section 15-11n-19w, approximately two miles north of the Tejon Field central producing area.

Vallecitos Completion

Lowry R. Lytle, Operator, completed Ashurst No. 11-x flowing 250 b/d of 31 gravity clean oil through a 24/64" bean. A westerly extension test located in the northwest quarter of Section 33-16s-11e, the well was drilled to a total depth of 4829 feet and cemented 7" casing at 4500 feet and then gun perforated from 4137-4125 and 3862-3856 feet.

Two McDonald Anticline Tests

Ferguson and Bosworth, Bakersfield operators, have staked locations for Layman No. 34 and Lyman No. 35, both located in the southeast quarter of Section 18-28s-20e.

Paloma Well For Gulf

Western Gulf Oil Company is grading location for Paloma Unit No. 72-11, an 11,525' test to be drilled in the northeast quarter of Section 11-32n-26e.

Paloma Outpost Test Abandoned

Atlantic Oil Company, General Petroleum Corp. and F. E. Fairfield have abandoned their KCL No. 71 at a total depth of 15,414 feet. The test was located in the northeast quarter of Section 21-32s-26e, two and one-half miles southeast of Paloma Field production.

King City Test Abandoned

Barron Kidd, Operator, has abandoned Spreckles No. 1 at a total depth of 1354 feet. The test was located three miles northwest of King City in Section 25-19s-7e.

Rosedale Completion For Humble

Humble Oil & Refining Company completed KCL No. G-3 flowing 130 b/d of 27 gravity oil cutting 0.1 percent through a 3/16" bean with pressures of 925/1175 psi, and 315 mcf of gas. Located in the southeast quarter of Section 14-29s-26e, the well was drilled to 5150 feet, cemented 4½"

Remedial Versatility

WITH HALLIBURTON "DM-DC" DRILLABLE SQUEEZE PACKERS/ BRIDGE PLUGS

Simple design . . . easy to run in and set on tubing, drill pipe or wire line—for general application in any well . . . regardless of depth or pressure; effecting a positive fluid shut-off from either direction . . . establishes the "DM-DC" Drillable Squeeze Packer as the industry's most versatile tool for either squeeze cementing, or as a bridge plug.

These high quality and dependable squeeze packers are used to form an effective plug in "squeezing" cement or fluid below packer through tubing or drill pipe at any predetermined point behind liner or casing; around shoe or shoe joint. Can also be used as casing bridge plugs for preventing movement of fluid through packer from either direction.

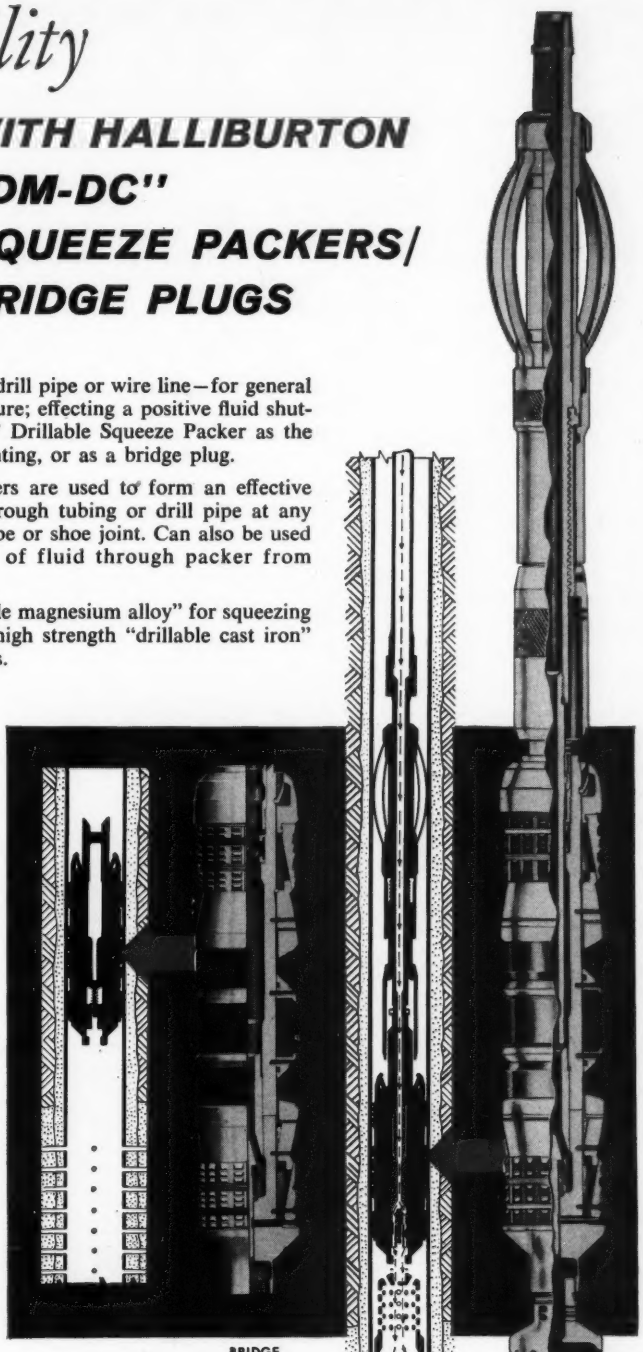
Type "DM" is constructed of high strength "drillable magnesium alloy" for squeezing or temporary bridge plugs . . . type "DC" is made of high strength "drillable cast iron" for squeezing or permanent or temporary bridge plugs.

Several additional advantages and outstanding features of this packer are:

- Tubing and circulating valve are free from packer before squeezing begins; can be picked up as desired between stages.
- Tubing and circulating valve can be removed from well any time for tubing leak repairs; then re-enter the packer.
- No strain is taken on tubing while squeezing.
- Packer will withstand *any* pressure that can safely be put on casing or tubing.
- The back pressure valve is the sealing cup type which provides a more positive seal.
- Can be set with Halliburton Electrical Wire Line Setting Tool, and the "DCM" Cup Type Setting Tool . . . methods that afford substantial savings in time, wear on casing, tubing, drill pipe and rig.

A shut-off sealing plug to prevent contamination, may be pumped down 2″ or 2½″ tubing, between fluids, and shut off in the packer.

A "DM-DC" Squeeze Packer may be converted into a bridge plug by dropping a sealing plug down through the tubing or installing a permanent sealing plug before running into well.



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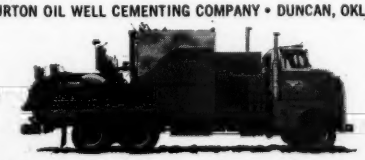

"284 SERVICE CENTERS . . . JUST MINUTES AWAY FROM YOUR RIG"

casing at 4927 feet and gun perforated the casing from 4758-4828 and 4838-4843 feet.

Jasmin Area Discovery

Pacific Oil and Gas Development Corp. completed W.G.O.-Brayton No. 53-30 as a new field discovery, pumping 48 b/d of 19 gravity clean oil. Located in the northeast quarter of Section 30-25s-27e, the well was drilled to 4365 feet and then redrilled to 4227 feet. 7" casing is cemented at 4200 feet, and production is from the Famosa Sand, topped at 4200 feet.

Antelope Valley Test

David E. Hedgecock of Avenal, Calif., is grading location for Edsoil-Gillison No. 1, located in the southwest quarter of Section 32-25s-18e. The test, expected to be drilled to 2000 feet, is five miles southwest of the Devils Den field.

Garrison City Richfield Test

Richfield Oil Corp. has staked location for Mitchel-Thiessen No. 1 located in the center of the northeast quarter of Section 9-28s-24e, about one-half mile east of the Golden Bear Oil Company's discovery well.

Golden Bear Test

Golden Bear Oil Company's Ohio-Mitchel No. 66x-9 in Section 9-28s-24e drilled to 6100 feet, and finding the Mitchel Zone wet, has been plugged to 3830 feet. On a test of the interval 3796-3830 feet, the well flowed 1,000 mcf of gas per day. 5½" casing will be cemented at 3830 feet for a test of the interval 3800-3810 feet.

Round Mountain Test Abandons

Humble Oil & Refining Company abandoned W. R. Bailey No. 1 northwest of the Sharktooth area in Section 10-28s-28e, at a total depth of 3063 feet.

Lockwood Valley Test

Dr. Herschel L. Copelan is starting to drill Copelan-Hyatt No. 1 located in the southwest quarter of Section 23-8n-21w. Dr. Copelan has approximately 20,000 acres under lease and expects to drill several 1500 foot wells to test the large block of leases.

King City Test Quits

Marport Oil Company abandoned Marport-MP No. 1 in Section 11-20s-7e after reaching a total depth of 2601 feet. No tests were run before abandoning.

Edison Test For Tidewater

Tidewater Oil Company is grading location for Porter No. 17-7, a 4000 foot test located in the southeast quarter of Section 17-30s-29e.

Gosford Completion For Signal

Signal Oil and Gas Company completed KCL No. 38-12 in Section 12-30s-26e, from the Upper Stevens Sand, flowing 475 b/d of 35 gravity oil cutting 2 percent water through a 17/64" bean. Drilled to a total depth of 8018 feet, 5½" casing was cemented at 7367 feet and gun perforated at intervals from 7130-6775 feet.

Carrizo Plans Wildcat Test

Bell Petroleum Company is grading location for Grayson-Owen No. 53-19, a 4500 foot test, located in the northeast quarter of Section 19-31s-19e.

Gosford Outpost Test

Signal Oil and Gas Company will drill KCL No. 47-12 in the southwest corner of Section 12-30s-26e, 2000 feet north of the Gosford field production.

Gosford Test For Universal

Universal Consolidated Oil Company is ready to spud Statex-KCL No. 87-13, a field well located in the southeast quarter of Section 13-30s-26e.

COASTAL AREA

South American Test

Cabeen Exploration Company is preparing to drill McCormack No. A-1, an 8500 foot test located in the northwest quarter of Section 32-3n-20w.

Phillips Offshore Test

Offshore from Point Conception, Phillips Petroleum Company is drilling Phillips Petroleum-Pauley et al-State 2207 E. T. No. 2 in projected Section 14-4n-34w. This location is approximately one half mile northwest of the Company's Well No. 1, now suspended at a redrilled depth of 4230 feet, after being drilled to 5010 feet.

Tajiguas Test Abandoned

Standard Oil Company has abandoned its Santa Barbara County test, Tajiguas Ranch No. 1 in Section 35-5n-31w, after drilling to a total depth of 3530 feet.

Union Del Norte Test

Union Oil Company is grading location for McGrath-McCormick No. 1 in the northeast quarter of Section 26-2n-22w, approximately one and one half miles northwest of the Oxnard Field.

Newberry Park Wildcat

The Superior Oil Company has staked location for Janss Community No. 1 in the northwest quarter of Section 6-1n-19w. The test is expected to be drilled to 6500 feet.

El Rio Test For Gulf

Western Gulf Oil Company is grading location for Grubb No. 1, a deep test, located in the southeast quarter of Section 22-2n-22w.

Bardsdale Deep Test

Union Oil Company is preparing to drill Irwin Berylwood No. 5 in the southwest quarter of Section 1-3n-20w. The test is scheduled to go to approximately 14,500 feet.

Shell Abandons Summerland Test

Shell Oil Company's Shell-Bates No. 2, approximately 3 miles northwest of the Rincon Field in Section 35-4n-25w, has been plugged and abandoned at a total depth of 10,891 feet.

South Mountain Deep Test

The Texas Company is grading location for Santa Paula No. 70 located in the northwest quarter of Section 18-3n-20w. The test will be drilled to 11,500 feet. Deepest present production is from 5000 feet and above.

Carpinteria Test Abandoned

Guiberson and Cudahy abandoned Shepard No. 1 after running electric log at a total depth of 8519 feet. The test was located one mile north of Carpinteria in Section 29-4n-25w.

NORTHERN CALIFORNIA

Colusa County Gas Test

In the Arbuckle area, Wm. H. Hudson is preparing to spud Zumwalt No. 2 located in the northeast quarter of Section 35-14n-3w. This 5000 foot well is the operator's second test in the area and is approximately four miles northwest of Arbuckle gas production.

Beehive Bend Test Abandoned

Berry Holding Company has abandoned Kennedy No. 2 after drilling to 6000 feet. The test was located in Section 15-19n-2w, west of the field production.

Butte County Gas Test

Dunlap Oil Company is moving in rotary on Bayshore No. 1, a wildcat test, located in the northwest quarter of Section 18-17n-1e. The test, which is expected to be drilled to 3500 feet, is approximately one mile northwest of the Honolulu Oil Corp. Wild Goose No. 2 well, completed in 1951 flowing 7000 mcf of gas.

Solano County Test Spuds

McCulloch Oil Exploration Co. of Calif., Inc. has spudded McCulloch-Macson-Scally No. 1 and is drilling below 2000 feet. Located in Section 10-4n-1w on the Potrero Hill Anticline, the test is slated to go to 9000 feet.

Sacramento Well Testing

In the Walnut Grove area, Brazos Oil and Gas Company is preparing to complete Fong Unit No. 1, a field extension well in Section 2-4n-4e. Drilled to a total depth of 5500 feet, the test has 5½" casing cemented at 4665 feet.

Madera County Test

Hathaway Company has spudded in on Slaven No. 1, a 5000 foot test located in the northeast quarter of Section 6-13s-18e, about 9 miles south of the town of Madera. Company tools are being used.

FOUR CORNERS AREA

New Mexico

Six miles east of the Gallup production at Verde Field in San Juan County, Standard Oil Company of Texas completed Federal No. 1 in Section 5-31n-13w as a new discovery, flowing 225 b/d through a 24/64" bean. Production is from the Gallup through perforations from 5900-6200 feet. Total depth of the well is 6200 feet with 5½" casing cemented at 5347 feet.

Gulf Oil Company is grading location for Navajo No. 2 located in the northeast quarter of Section 22-28n-14w in San Juan County. The well will be a 6000 foot Dakota test.

Colorado

Lion Oil Company (Monsanto) completed Retherford-Government No. 1 located in Section 15-35n-20w as a dual completion in two Paradox Zones. From the upper perforations, in the Bluff Zone 5872-5862 feet, flow was 810 b/d through a ½" bean. From the perforated interval 5950-5944 in the lower Ismay, the well flowed 190 b/d through a ⅝" bean. The Upper Ismay, which flowed on a formation test of the interval 5938-5901 feet at a 20 barrel per hour rate, was not perforated.

General Petroleum Corporation is preparing to abandon Kikel No. 55-17 in Section 17-34n-11w in La Plata County at a total depth of 10,031 feet. Several tests of various intervals from 3100 feet to bottom indicated non commercial showings.

ALASKA

Kenai Peninsula

Standard Oil Company and Richfield Oil Corporation's Swanson River Unit No. 4 in Section 16-8n-9w is redrilling directionally to the east below 6500 feet. The test was drilled to a total depth of 12,582 feet before plugging back to redrill.

Halbouty Alaska Oil Company's Halaska-King Oil Company No. 1 in Section 6-7n-9w is drilling below 10,720 feet. The company is preparing location, before the spring "break-up," for two more tests, one 6 miles south and one 10 miles to the west of the present drilling well.

Cape Fairweather

Colorado Oil and Gas Corp. and Frankfort Oil Co. are redrilling below 10,500 feet on Yakutat No. 3 in Section 3-27s-34w. Total depth of the test is 10,848 feet.

Iniskin Bay

Alaska Consolidated Oil Co. and Iniskin Unit Operators, Inc.'s Antonio Zappa No. 1 in Section 18-5s-23w is drilling below 5710 feet. Robin Willis is the engineer and geologist in charge.

OTHER AREAS

State of Nevada

Shell Oil Company will drill Bowl of Fire Unit No. 1, an 8000 foot Paleozoic test approximately 25 miles east of Las Vegas in Clark County, on the center of southwest quarter of sw¼ Section 5-20e-66e. This will be the first major oil company test in southern Nevada. The Neotsu Corporation of Los Angeles (W. W. Porter II) holds approximately 2500 acres in the area.

Venezuela

A well flowing 6640 b/d has been completed in Lake Maracaibo, Venezuela by Signal Oil and Gas of Venezuela, operator for foreign subsidiaries of Signal Oil and Gas Company, Pure Oil Company, and Standard Oil Company (Ohio). The new development well, Centro No. 16, produced 26.0 gravity clean oil from Eocene sands on a two hour test. Signal's three rigs on the 28,000 acre concession currently are drilling two development wells and one exploratory well.

Daily production of the Lake Maracaibo operation, in which Signal Oil & Gas has a 50 percent interest, is expected to reach approximately 50,000 barrels in 1959. Signal stockholders were recently told by Samuel B. Mosher, chairman of the board. Current production is approximately 30,000 barrels a day.

State of Louisiana

A high pressure gas-condensate discovery which may turn out to be one of the year's major finds has been tested in Cameron Parish by Tidewater Oil Co. Their No. 2 Lacassane, four miles east of Chalkley Field and five miles southwest of nearest production at South Thornwell Field, has the deepest Camerina Sand production ever encountered and a calculated bottom hole pressure in excess of 14,000 psi. The discovery, 15 miles west of Jennings, on production test flowed at the rate of 2.6 million cubic feet of gas daily through ⅛-inch choke with 87.5 barrels of 48.2 gravity condensate through perforations at 16,122-130 in Miocene.

LAUGH THIS OFF!!

"Dad, Becky and I think we'll get married. How much money will we need?"

"More."

He kissed her.

She: "Oh, I think you are terrible."

He: "Well, I think I can do better next time."

When Billy brought his January report card home, his storekeeper father was bothered by the low grades.

"Billy, what's wrong?"

"Oh, pop, you know how it is. After the holidays they always mark everything down."

Tenant: "The people upstairs are very annoying. Last night they stomped and banged on the floor until after midnight."

Landlord: "Did they wake you?"

Tenant: "No. Luckily I was up—playing my tuba."

They kept pushing him toward the rear of the bus until finally they pushed him out the back exit door. He ran excitedly to the front of the bus and tried to get on again. And someone yelled at him and said, "Sorry, bub, but we're too crowded."

"I don't care," he wailed. "You've got to let me on or I'll get fired. I'm the driver."

"My wife spends too much, nags me consistently, is very untidy and doesn't understand me."

"Really? When did you meet this other woman?"

Seven sailors and a lady, the only survivors from a shipwreck, were rescued from an island after seven long years. One sailor was selling his experience to a minister friend. The minister asked:

"And my good boy, was the lady chaste?"

"And how," he replied, "from one end of the island to the other."

The inquisitive chap stared at the name on the shop window—A. Swindler. He went inside and asked:

"Wouldn't it be better if you printed your first name in full?"

"Hardly," said the merchant. "My name is Adam."

The physician, after a patient died, went to the executor of the estate and presented his bill.

"Do you wish to have this sworn to?" he asked.

"No," said the executor. "The death of the deceased is sufficient evidence that you attended him professionally."

Johnny—"Grandpa, why don't you get a hearing aid?"

Gramps—"Don't need it, son. I hear more now than I can understand."

"Among the prettiest girls present was Lientenant-Commander Jones," wrote a young reporter in his account of a party. The next day he was called into the editor's office.

"What do you mean by writing stuff like this?" demanded the editor.

"Well," explained the reporter, "That's where he was."

One of the airlines made it a practice to give its passengers sticks of gum which were labeled: "To prevent unpleasant ear pressure during takeoffs and landings."

On one trip, an elderly woman plaintively appealed to the stewardess: "Help me get this stuff out of my ears. It hasn't done me a bit of good, anyway."

"Listen," said one cute young thing to another, concerning a rival, "All a sweater does for her is make her itch!"

Johnston Stainless Welding Rods

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JOHNSTON STAINLESS WELDING RODS INC.

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Just as individuals can be positively identified by their fingerprints, so can the formations of the earth surrounding a well bore. Each formation has definite characteristics or "fingerprints" which identify it beyond doubt – revealing its type, its physical properties, and its content.

The trick is to accurately record these "fingerprints" in detail and to provide the instrumentation and experience necessary to reliably evaluate the nature of the formations – that's where McCullough comes in!

McCullough provides the many specialized nuclear logging services listed below. Each employs the highly sensitive Scintillometer. Each is designed to perform a specific function – to identify and to reveal maximum information about those formation characteristics to which it is responsive, with great accuracy.

McCullough Nuclear Logs are clear, detailed, accurate and repeatable. Our many years of experience have developed techniques of interpretation and evaluation that reveal full formation information – with reliable accuracy.

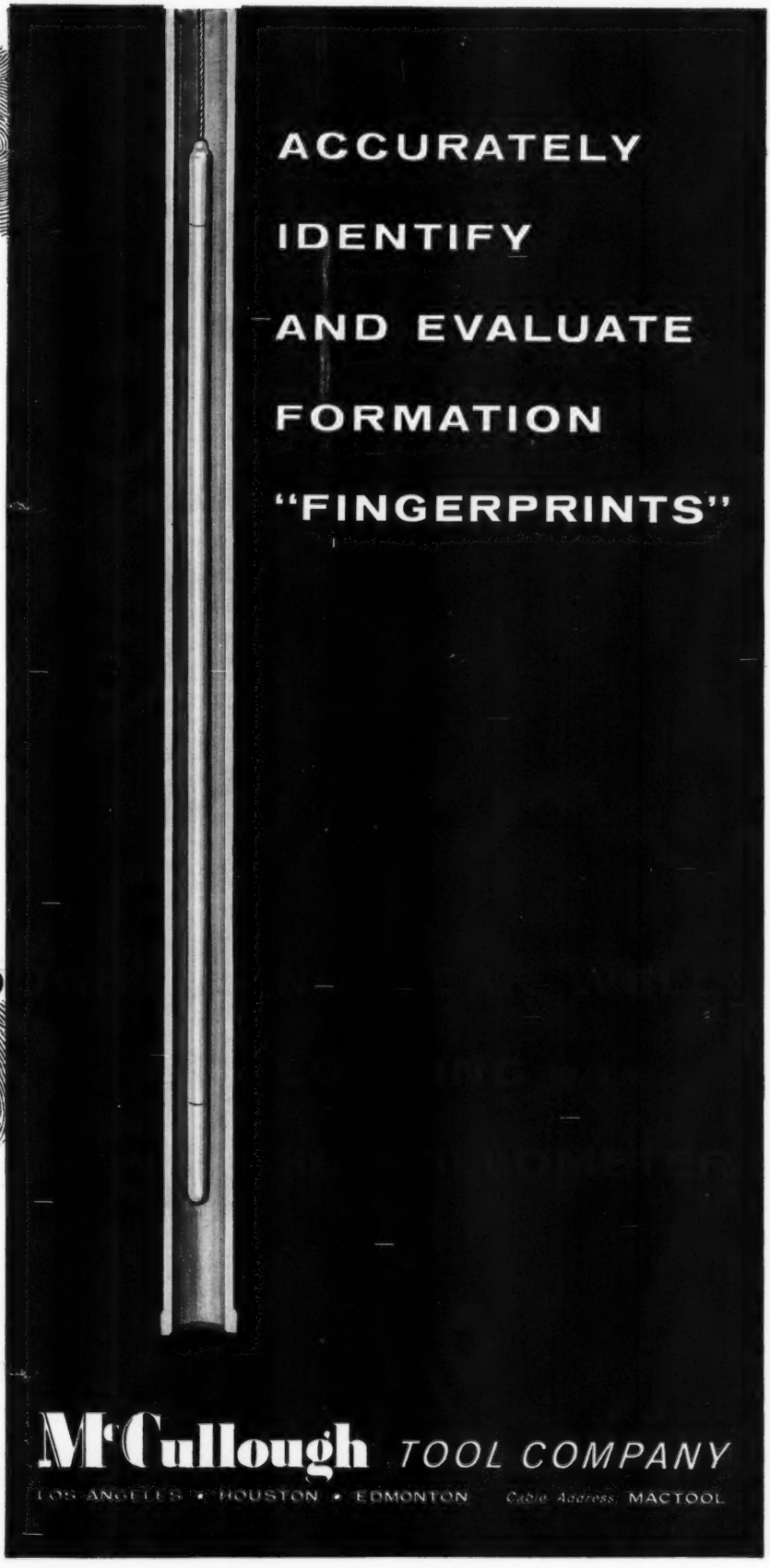
On that next job, it will pay you to let McCullough "fingerprint" your well – and interpret those "fingerprints" to reveal the true nature of sub-surface structures.

McCULLO

McCullough Nuclear Well Logging Services

Gamma Ray Log, Neutron Log or simultaneous Gamma Ray-Neutron Log in cased or open hole.

- Salinity Log and combinations of Salinity-Gamma Ray-Neutron curves in cased or open hole.
- Multiple Spaced Neutron Log in cased or open hole.
- Tracer Service with Sub-surface Injector or surface injection.
- Density Log, simultaneous Density-Gamma Ray Log and combinations of Density-Salinity-Gamma Ray-Neutron curves in open hole.
- Cement Log.
- Simultaneous Collar Log recorded with all Nuclear Logs in cased hole.



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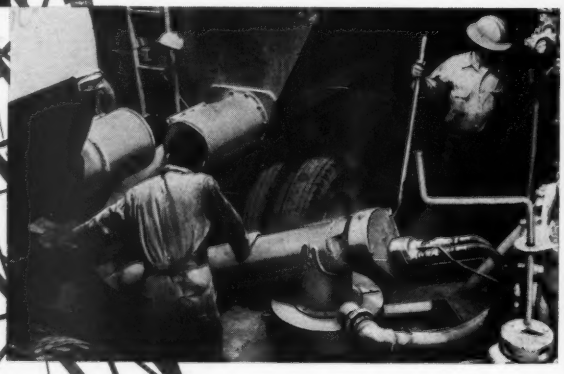
LAB TESTED

FIELD PROVED



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